Fundamental Mechanics: Quiz 9

1 November 2016

Name: Taylor Larrechea **Total:** 1.5 /5

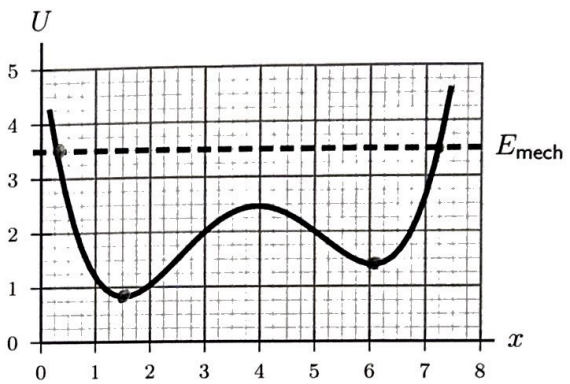
Formulae:

$$K = \frac{1}{2}mv^2 \qquad W = \vec{\mathbf{F}} \cdot \Delta\vec{\mathbf{r}} = F\Delta r \cos\theta \qquad W_{\text{net}} = \Delta K \qquad g = 9.80\,\text{m/s}^2$$

$$U_{\text{g}} = mgy \qquad U_{\text{spring}} = \frac{1}{2}k(\Delta s)^2 \qquad E = K + U_{\text{g}} + U_{\text{spring}} \qquad \Delta E = W_{\text{nc}}$$

$$F_x = -\frac{dU}{dx}$$

A particle with the illustrated total mechanical energy moves subject to the illustrated potential. Indicate the locations at which the **speed is a maximum** and **the force on the particle is zero**.



At spots x= 1.5 and ~~x=~~ ~~0~~ (-0.5) the speeds are maximums because this is where all of the energy is kinetic with no potential.

Where ~~x=0.25~~ and x=7.25 is where ~~the~~ force is 0 because ~~all~~ of the energy is ~~potential~~,

(-3)

F = slope....